



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-2962
Plant ID No.: 049-00149
Applicant: TRANSFLO Terminal Services, Inc.
Facility Name: Fairmont Terminal
Location: Marion County
NAICS Code: 488210
Application Type: Construction
Received Date: July 16, 2012
Engineer Assigned: Steven R. Pursley, PE
Fee Amount: \$1,000.00
Date Received: July 17, 2012
Complete Date: August 15, 2012
Due Date: November 13, 2012
Applicant Ad Date: July 12, 2012
Newspaper: *Times West Virginian*
UTM's: Easting: 574.732 km Northing: 4,371.05 km Zone: 17
Description: Cement and frac sand off loading, loading and storage.

DESCRIPTION OF PROCESS

Two processes are planned at the Fairmont facility. The first process involves the direct transfer of materials from rail to truck using conveyors. The second process involves the transfer and on site storage of material. The onsite storage will be in a series of three enclosed buildings and no outdoor storage piles are intended for the site.

DIRECT TRANSFER

The first process involves the direct transloading of materials between railcars and trucks using covered conveyors, each of which includes a baghouse for particulate control. The planned direct transfer operations involve the use of up to four conveyors for frac sand (ie up to four trucks could be loaded simultaneously) and one conveyor for cement which

may be operated concurrently.

STORAGE AND TRANSFER

The second process involves the use of storage buildings for the on-site storage of materials. First, the sand will be transferred from railcar to the building via a covered conveyor. From the conveyor the sand may be deposited directly on the floor of the building or it may be loaded into a conveyor hopper. If deposited on the floor, it will later be dropped into the hopper via front end loader. The conveyor bin will be located over the pickup point of another covered conveyor. This conveyor will then discharge to a stacker which provides the ability to transfer the sand to various locations within the building.

The resulting piles of material will be located in the building. Each side will be dedicated to one or two grades of frac sand. The grades of frac sand typically differ by particle size according to API specifications. The building is intended for temporary product storage. It is not expected that the material will be moved multiple times within the building to redistribute or rotate the material. The material will be moved only when loaded to the receiving trucks. However, for emission estimate purposes, the applicant conservatively assumed that the material is moved once by front end loader after being loaded into the building prior to loadout. The material will then be transferred from the building storage to a conveyor hopper bin similar to what is used for the material receiving. This transfer from the building to the hopper bin is accomplished using a front end loader. The conveyor hopper bin feeds a covered conveyor that transfers the material to the receiving truck located at the south door of the building.

Each building can store approximately 10,000 tons of sand. The interior building height is approximately 28 feet. Ventilation is planned to be provided using fans mounted high on the east and west walls. Although there is a measure of particulate control provided by the building, the applicant conservatively did not account for the control efficiency in the emission calculations.

SITE INSPECTION

A site inspection of the site was performed by the writer on September 19, 2012. The portion of the facility covered by the no permit needed letter PD12-048 was on the site but was not operating at the time. The facility is located within Fairmont city limits but in a fairly isolated area. There are a few residences near the facility but none are within site of the facility. A photo of the site was taken and is included in the file.

To get to the facility take I79 north to exit 136. At the end of the off ramp turn left on Fairmont Gateway Connector / 273 North. Go 1.5 miles and turn right on Washington St. Go approximately 400 feet and turn right on Madison St. Go approximately 200 feet and the entrance to the facility is on the left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions were estimated under the three different operating scenarios described in the Process Description above.

Frac Sand Direct Transfer to Trucks

Emissions for the direct transfer of sand from rail car to trucks were estimated using AP-42 Table 11.19.2-2 for transfer points. Baghouse emissions were estimated using venter grain loading and air flow data. Controlled emissions from this process were estimated to be as follows:

	PM		PM ₁₀		PM _{.25}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Transfer Points	0.17	0.04	0.06	0.02	0.02	0.01
Baghouse	0.20	0.04	0.20	0.04	0.20	0.04
Total	0.37	0.08	0.26	0.06	0.22	0.05

Frac Sand Transfer With Intermediate Storage

Emissions for the transfer of sand from rail car to trucks involving intermediate indoor storage were estimated using AP-42 Table 11.19.2-2 for transfer points (the applicant assumed that emissions from a stacker transfer point equal 4X the emissions from a regular conveyor transfer point). Also note that in the applicants annual emission calculations used an emission factor of 0.015 lb/ton for uncontrolled transfer points instead of 0.0015 lb/ton which is the AP-42 factor. This was probably an error but since it makes the calculations overly conservative without triggering any other substantial requirements, they were allowed. Controlled emissions from this process were estimated to be as follows:

	PM		PM ₁₀		PM _{.25}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Transfer Points	8.15	5.82	2.99	2.35	0.86	2.28

Cement Direct Transfer to Trucks

Emissions for the direct transfer of cement from rail car to trucks were estimated using AP-42 Equation 11.12-1 for transfer points. Baghouse emissions were estimated

using vender grain loading and air flow data. Controlled emissions from this process were estimated to be as follows:

	PM		PM ₁₀		PM _{.25}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Transfer Points	22.72	3.30	6.4	0.95	0.96	0.17
Baghouse	0.05	0.04	0.05	0.04	0.05	0.04
Total	22.77	3.34	6.45	0.99	1.01	0.21

Haulroad Emissions

The applicant performed the haul road emission calculations using AP-42 Section 13.2.2. The applicant took no credit for control measures. However, the permit will require the use of water trucks.

	PM		PM ₁₀		PM _{.25}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Haul Roads	49.87	47.45	13.71	13.04	1.37	1.30

Total Facilitywide Emissions

Note that the maximum hourly emissions below are grossly overestimated since all three modes of operation cannot happen at full capacity simultaneously.

	PM		PM ₁₀		PM _{.25}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Total	81.16	56.69	23.41	16.44	3.46	3.84

REGULATORY APPLICABILITY

The following state regulations apply to the facility (no federal rules i.e. NSPS, MACT/NESHAPs are applicable):

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements,

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Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation).

Because uncontrolled emissions from the facility exceed 6 pounds per hour and 10 tons per year of PM the facility is subject to 45CSR13.

45CSR17 To Prevent and Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter.

The main requirement of 45CSR17 is the prohibition of fugitive particulate matter which causes or contributes to statutory air pollution. TRANSFLO will comply with this requirement with the use of covered conveyors controlled by baghouses. Additionally, all haulroads will be paved and watered as necessary.

45CSR22 Air Quality Management Fee Program

The facility is not subject to any NSPS, MACT or NESHAP. Additionally, the facility is defined as a minor source under 45CSR30. Therefore the facility is not subject to 45CSR30 and will pay its annual fees through the Rule 22 program.

Nonapplicability Determinations

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

Since this is not a manufacturing source (cement and frac sand are simply unloaded, stored and shipped) it is not subject to 45CSR7.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

No non-criteria regulated pollutants are expected to be emitted from the facility.

AIR QUALITY IMPACT ANALYSIS

Because this is a minor source as defined in 45CSR14, no modeling was performed.

MONITORING OF OPERATIONS

The permittee shall maintain the following records:

- * Records of monthly EPA Method 22 opacity testing and any corrective actions taken.
- * Monthly throughput of cement material.
- * Monthly throughput of frac sand.
- * Monthly inspection of all baghouse bags.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-2962 for the construction of a bulk cement and frac sand facility in Fairmont, Marion County, be granted to TRANSFLO Terminal Services, Inc.

Steven R. Pursley, PE
Engineer

September 20, 2012

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